SCIENCE & GOVERNMENT REPORT

12th Year of Publication

The Independent Bulletin of Science Policy

Volume XII, No. 8 P.O. Box 6226A, Washington, D.C. 20015 May 1, 1982

Science in the Schools: Washington's Worried

The deterioration of science and mathematics instruction in the nation's elementary and secondary schools has progressed so close to a political flashpoint that even the indolent Reagan Administration feels compelled to appear concerned about it. But, after 15 months of Manson-style carnage against the federal government's few efforts to remedy this particular educational blight, the Administration's motions do not generate confidence in educational circles.

Meanwhile, the science-math issue, as with nuclear-freeze sentiments, the budget deficit, and neglect of the poor, has been successfully embraced by forces outside the Administration, leaving Mr. Reagan and his cohorts far down the trail, mumbling half-baked explanations and unpersuasive assurances of eventual remedies.

The initiative, however, has gone elsewhere, including the rejuvenated National Academy of Sciences (SGR Vol. XII, No. 6), which on May 12-13, in Washington, is putting on a National Convocation on Precollege Education in Mathematics and Science.

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Lest this be mistaken for a gathering of schoolmarms and masters, it should be understood that the performing cast of characters is heavily studded with big-league governmental and political types, including Defense Secretary Caspar Weinberger; Rep. Don Fuqua (D-Fla), Chairman of the House Science and Technology Committee; Senator Harrison Schmitt (R-NM), Chairman of the Commerce Subcommittee on Science, Technology, and Space; Governor Albert H. Quie, Minnesota, and John B. Slaughter, Director of the National Science Foundation, whose budget for science education—the key federal money in this area—has been eliminated by the Administration.

Following the Academy meeting, the American Association for the Advancement of Science will hold a two-day conference, also in Washington, at which some 30 scientific societies will discuss assistance that they might provide for science and mathematics education.

Meanwhile, in rather different political circumstances, the National Science Board, policymaking body of the National Science Foundation, has finally assembled—after nearly six months of bureaucratic floundering—an 18-member Commission on Precollege Education in Mathematics, Science and Technology. A direct outgrowth of the Administration's elimination of NSF's budget for science and math education, which was at $70 million a year when Reagan took office, the Science Board's Commission was widely assailed during its gestation period as superfluous, given the volumes of gloomy data that have been assembled on the deterioration of science and math instruction. (Thirty major studies have been made on the subject in recent years, according to the National Science Teachers Association.) In response to the charge of purposeless redundancy, the Science Board explains that the Commission's task is to develop an "action plan" to address the "near-crisis" situation of science and math education. (See Page 3 for details of the NSB Commission.)

The Academy, the AAAS, and, especially the Science Board, which, though composed of private citizens, sits atop an Executive branch agency, are sensitively response to the Administration's insistence that local initiative provides the most promising opportunities for

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In Brief

James B. Wyngaarden's progress toward the NIH directorship—vacant since last July—continues at a leisurely pace, though not by any fault of his. Picked for the post early last fall, Wyngaarden, Chairman of Duke University's Department of Medicine, wasn't officially nominated until February. The Senate Labor and Human Resources Committee didn't get around to a confirmation hearing until April 21; it was quick and painless and he sailed through. Full Senate approval was voted last week, but still to come, and not yet scheduled, is a swearing-in ceremony. NIH sources say Wyngaarden will report for duty when the job is officially his.

The main reason for the 10-month gap in the country's top biomedical research post is that the Administration doesn't consider the job very important.

"Toward Healthful Diets," the National Academy of Sciences' fats-okay report of two years ago, stirred so much antagonism among mainstream nutrition researchers that the late President Philip Handler, initiator and defender of the report, wanted the NAS Food and Nutrition Board to have another go at it. The matter, however, has been quietly dropped. One reason is that the Board couldn't stir even a bit of startup money from federal agencies concerned with nutrition.

...Evolution into a New Political Concern

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helping the schools. Thus, all these of them will provide generous time for discussions of non-federal activities, ranging from the school-district level to collaborative arrangements with local firms that might provide on-the-job experience with science- and math-related tasks.

But ever-present in the background of these forthcoming proceedings is that the Reagan Administration simply wiped out NSF's school-level science and math programs and it did so without examining their quality and utility, without warning, and without consultation with the National Science Board, which, by reasonable interpretation of NSF's legislative charter, claims authority to set policy for the Foundation.

Concern About Soviet Strides

The generally held view in and around educational circles, in and out of Washington, is that the Administration did so in a post-election orgy of resentment against all federal involvement with local schools, but with particular emphasis on NSF, whose resistance to schlock-science nuttiness has long outraged some of the furrier members of the right-wing tribes.

The transformation of educational inadequacy into a politically sensitive issue has occurred at a kind of crawling pace that eludes journalistic notice and political exploitation until things get so bad that notice is unavoidable. Complaints about scientific and mathematical illiteracy were publicly expressed by education specialists during the latter years of the Carter Administration, but in Washington's ever-present clamoring for attention, these were generally disregarded as just another special interest angling for a federal handout. A bit more attention was paid when Professor Izaak Wirszup, of the University of Chicago, taking part in a Carter-initiated study of science education, compared the Soviet Union's science and math school standards with ours and concluded that the US was trailing far behind. Characteristically, however, the Carter study led to a great deal of sophisticated data collecting, handwringing, and a conclusion that something ought to be done, but not now.

The big change in political perceptions came when industrial employers and defense officials confirmed the laments of the educators in Congressional testimony about the benighted educational status of young job seekers and military recruits. Present, too, though it is difficult to measure with precision, was parental concern about the educational preparation being given children coming into a depressed job market where the best opportunities require training in mathematics and science. Concerned parents who made inquiries soon learned that one of the first actions taken by the newly installed Reagan Administration was the elimination of the NSF-supported programs that helped maintain the skills of their children's science and math teachers.

The teachers, justifiably furious and feeling betrayed, have not been silent about the elimination of this assistance, as was the case April 4 in Chicago, when White House Science Adviser George A. Keyworth showed up in response to an invitation to address the annual convention of the National Science Teachers Association. He ran into hostile, angry questioning when he recited his litany about the Reagan Administration's concern for deficiencies in science and math instruction.

Congress Gets an Earful

At the same time, members of Congress—regularly ear-to-the-ground for what's riling the home folks—have sensed that, apart from the educational and economic aspects of the issue, there's political paydirt in it. Senate committees with relevant jurisdictions have looked at the problem, but being Republican controlled, that body hasn't been inclined to stir up trouble for its President. In the Democratically controlled House, however, the Science and Technology Committee has provided a sympathetic forum for a parade of witnesses who deplore the Administration's indifference to education. And the House Appropriations Subcommittee that handles the budget for Keyworth's Office of Science and Technology Policy took advantage of that usually brief and routine budget ritual, April 21, to grill the hapless Science Adviser about education policies that he dutifully defends without evident enthusiasm (see Page 5 for excerpts from that encounter).

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©Science & Government Report, Inc., 1982

ISSN 0048-9581

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Independently published by *Science & Government Report*, Inc., twice monthly, except once in January, June & July. Annual Subscription: Institutions, $127.50 (two years, $220.00); individuals, $55.00 (two years, $95.00). Editorial offices at 3736 Kanawha St. N.W., Washington, DC 20015. Tel. (202) 244-4135. Second-class postage paid at Washington, DC. Please address all subscription correspondence to Box 6226A, Northwest Station, Washington, DC 20015. Reproduction without permission is prohibited. SGR is available on Xerox University Microfilms. Claims for missing back issues will be filled without charge if made within six months of publication date.

National Science Board Launches Own Study

Distinguished members, strong staff, plus assurances that this study will be different have accompanied the introduction of the National Science Board's (NSB) 18-member Commission on Precollege Education in Mathematics, Science and Technology. Perhaps it will be different. But viewing the Commission from a political landscape strewn with forgotten reports of similarly constituted groups in recent years does provide ground for skepticism.

The Commission is largely composed of people committed to heavy responsibilities elsewhere. Its co-chairman, William T. Coleman Jr., former Secretary of Transportation, not only has a thriving corporate law practice in Washington and active civil rights interests, but has just been assigned by the Supreme Court to argue as a friend of the court against tax exemptions for racially segregated education—after the Reagan Administration supinely crawled out of the case. In addition, the Commission's faraway deadline for its final report, October 15, 1983, means that, at the earliest, its recommendations will become available for public discussion and legislative consideration just as the opening stage of the next presidential campaign gets underway. Assuming that its proposed remedies are accepted, it's a near certainty that even if the Reagan Administration is returned to office, almost everything will be put on hold for a post-inaugural re-examination; if there's a new Administration, it's an absolute certainty.

Thus, there are ample grounds for doubt about whether the Commission can actually accomplish anything. And such have been privately expressed to SGR in recent days by several veteran academic specialists on the Washington scene, who, while wishing

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The Slump in Schooling

The following data were cited by the Board in its announcement of the Commission:

- Between 1960 and 1977, the proportion of public high school students (Grade 9 to 12) enrolled in science and mathematics courses declined—from 60 to 48 percent in the case of science.
- Since 1970 there has been a nationwide trend toward reduction of high school graduation requirements. Only one-third of the nation's 17,000 school districts require more than one year of mathematics or science for graduation. At the same time colleges and universities have reduced the amount of mathematics and science required for admission.
- There has been a steady decline of science achievement in US 17-year olds as measured in three national assessments of science (1969, 1973, and 1977).
- Mathematics scores of 17-year olds declined significantly in two national assessments of mathematics (1973, 1978). The decline was especially severe in the areas of problem solving and the applications of mathematics.

EDUCATION

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In terms of science politics, the minuet between the National Academy of Sciences and the White House science office is one of the most enchanting performances in a long time. Academy President Frank Press, who served Carter in the Presidential advisory post that Keyworth holds under Reagan, disdains any suggestion that the Academy is functioning as headquarters for science's government-in-exile. That may not be the explicit intention, but the movements of the Academy do seem to be in harmony with the principle that power adores a vacuum—and when it comes to science policy, the Reagan administration is not filling the public arena.

With an organizational dexterity surprising to those accustomed to the Academy's elephantine lumberings, Press—in his first year in office—has swiftly made the Academy a major forum for illuminating issues on which the Reagan Administration has threatened traditional interests of the scientific community.

Last year he drew Keyworth and other Administration officials into a hurriedly assembled face-to-face confrontation on planned reductions in R&D spending (SGR Vol. XI, No. 18). The Academy has established a high-powered committee on Scientific Communication and National Security Issues to examine that festering subject (Vol. XI, No. 7). And now comes the grandly titled, star-laden National Convocation on Precollege Education in Mathematics and Science, which is not laden with sympathizers for the Reagan Administration's treatment of the schools.

Meanwhile, on none of these issues is much of substance heard from the White House Office of Science and Technology Policy. Keyworth, far more than his predecessors in the directorship, has taken to the national speechmaking circuit, but the science press long ago noted that he works from a stack of prose that's reshuffled for each occasion. The Science Adviser has repeatedly stated that the issue of science education receives more of his time than any other. Colleagues also point out that the Administration did its initial dirty work in this area several months before he took up his duties.—DSG

...Goal is to Produce an "Action Plan"

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the Commission *bon voyage* and success, have applied insights derived from bureaucratic post-mortems to conclude that the NSB Commission suffers from several serious congenital defects. These, in turn, readily foster suspicions that the Commission mainly represents that timetested money-saving ploy of staving off big spending demands by convening a study.

That's not at all farfetched, since the inquiry that the Commission is to conduct was initiated after the Reagan Administration obliterated the National Science Foundation's science and mathematics education budget. The Board, which claims to set policy for NSF—but wasn't consulted by the Stockman budgetcutters—recognized that it couldn't match the Administration's political firepower, and, after sulking a bit, responded by calling for a study. The White House figured why not, since the study provided the appearance of serious interest in an important problem, thus countering accusations of Administration indifference; NSF was authorized to make available $700,000 for the costs of the Commission.

With a bow to the Reagan Administration's adulation of local activities as a substitute for a federal role, the Science Board, in announcing the Commission, stated that "It will develop an action plan that will include a definition of the appropriate roles of federal, state, and local governments, professional and scientific societies, and the private sector in addressing this problem of national dimension."

But the fact is that the federal role in science and math education has been relatively sparse, costing all of $70 million a year at NSF when Reagan took office. And that money was being spent—and gratefully received by science teachers and administrators—because none of those other sectors of society are able to deal with "this problem of national dimension."

The Commission's schedule calls for publication of "preliminary results after 6 months," "substantive recommendations at the end of 12 months," and a "final action plan" in 18 months.

Serving as co-Chairman with Coleman is Cecily Cannan Selby, a biophysicist who was formerly National Executive Director of the Girl Scouts of America and a science teacher and headmistress of the Lenox School, New York City, from 1958 to 1972; she's now Chairman of the Board of Advisers of the North Carolina School of Science and Mathematics. The members are:

General Lew Allen Jr., US Air Force Chief of Staff.

Victoria Bergin, Association Commissioner for General Education, Texas Education Agency.

George Burnet Jr., Chairman, Department of Nuclear Engineering, Iowa State University.

William H. Cosby Jr., the actor (who holds a PhD in education).

Daniel J. Evans, former Governor of Washington; first choice for chairman, but he turned it down.

Donald S. Fredrickson, former Director of the National Institutes of Health, now a scholar-in-residence at the NAS.

Patricia Albjerg Graham, assumes office July 1 as Dean of the Harvard Graduate School of Education

Robert E. Larson, President, Systems Control, Inc.

Gerald D. Laubach, President, Pfizer, Inc.

Katherine P. Layton, Beverly Hills (Calif.) High School math teacher active in national educational associations.

Ruth B. Love, General Superintendent, Chicago Board of Education.

Arturo Madrid, President of the National Chicano Council in Higher Education, currently on leave from the University of Minnesota, where he held faculty and administrative positions.

Frederick Mosteller, of the Harvard School of Public Health and former President of the AAAS.

Robert W. Parry, Professor of Chemistry, University of Utah.

Benjamin F. Payton, President, Tuskegee Institute.

Herbert A. Simon, Professor of Computer Science and Psychology, Carnegie-Mellon University; 1978 Nobel laureate in economics.

Richard S. Nicholson, Director of NSF's Chemistry Division, will serve as the Commission's Executive Director.

Report Skimps on Spying

Admiral Bobby R. Inman's promise to give Congress details on alleged Soviet espionage in American universities (SGR Vol. XII, No. 7) has been followed by hand delivery to the House Science and Technology Committee of a 15-page paper titled "Soviet Acquisition of Western Technology," source unstated on the paper or by the messenger.

Inman, the soon-to-retire Deputy Director of the CIA, did tell the Committee that he wasn't altogether satisfied with the persuasiveness of an unclassified report on Soviet data collection from academe. If the delivered paper is, in fact, that report—which seems to be the case—his dissatisfaction is understandable, since it focuses on industrial espionage and reveals nothing that hasn't been previously published about mischief on campus. For example:

- ". . .Soviet candidates in various academic and scientific exchanges have nearly always proposed research activities involving technologies in areas that have direct military applications and in which the Soviets are technologically deficient."
- ". . .since the late 1970s, there has been increased emphasis by [Soviet and Eastern bloc] intelligence services on the acquisition of new Western technologies emerging from universities and research centers."

The Committee has made no formal comment on the paper, but staff members privately say it doesn't appear to provide anything not previously on the public record.

Science Adviser Assailed on Budget Cuts

The following excerpts, edited for brevity and clarity, are from a hearing April 21 at which George A. Keyworth, Director of the White House Office of Science and Technology Policy, testified before the House Appropriations Subcommittee on Housing and Urban Development and Independent Offices:

Chairman Edward P. Boland (D.-Mass): This Administration for all practical purposes has indicated zeroing out science education in 1982. I take it that the Administration position is that state and local governments ought to move in on this area.

Keyworth: I do believe that the federal government does have a responsibility but that budget was composed of a number of small programs generated to address a number of problems that I do not believe are the dominant problems of today. The Administration asked the National Science Board to make their first priority a very hard look at the status of science and engineering education in this country and to see what role the National Science Foundation can play to be most effective, and together we'd try to work out the programs that the Administration can support.

Boland: Is there a commitment to support science education for young people who are in the elementary schools?

Keyworth: It is important to invest in human capital, but dollars alone do not represent a solution. What we are trying to do now is support thought being given to action that can be taken by all areas of American society.

Rep. S. William Green (R-NY): There's a serious shortage of math and science teachers, despite the surplus of teachers generally. We're letting a whole generation slip by.

Keyworth: We are spending enormous amounts of time on the problem. We can't wait 18 months for an answer.

Green: I always view a budget as a statement of priorities, and don't see in this budget any addressing of those priorities. Talk is nice, studies are nice, but in the end, a budget says what an Administration is doing and I don't see this budget as saying this Administration is doing anything.

Keyworth: I believe that the implications of reducing funds for the science and engineering programs in NSF are grossly over-exaggerated. It was $70-odd million dollars for a family of programs that was totally ineffective. We should focus on where we can put our money wisely. The awareness of this problem has vastly increased nationally, but I don't think that anyone within the science community, within the teaching community or among parents has offered a visionary proposal that could be put into the fiscal 1983 budget. I think you will see some visionary proposals and gestures in fiscal 1984.

Rep. Louis Stokes (D-Ohio): I have some of the same concerns about setting up a new Commission for pre-college education in light of the fact that we already know many of the problems and studying the problem now just adds to the overall problem. I note that in all probability you're going to close down the resource center for science and engineering at Atlanta University. All this would demonstrate a low priority or no real commitment to the problems that we're talking about.

Keyworth: I can't address the motives for an individual funding action. We're trying to get the members of the academic community, the members of Congress, state and local governments, and try to identify not what the problem is, but what family of solutions will work for the next 5, 10, 15, 20 years, not just a general solution that will make our consciences feel as though we did address the problem.

Stokes: I still don't see how your budget addresses the problem.

Keyworth: What we did in the '83 budget is that we told a lot of people in the appropriate communities that the programs that were receiving federal funds were not addressing the problems of this country today. Cutting the NSF science and engineering budget has brought a lot of criticism on the Administration. But let me point out a very positive thing at this time: It has made a very much larger number of people address this problem. There are productive, constructive groups that are meeting in Washington every single week.

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"Visionary Initiatives"?

Noted with puzzlement in Washington science-policy circles is Presidential Science Adviser George A. Keyworth's repeated references to "visionary" in regard to the research policies of the Administration. He's used it in Congressional testimony (this page). And he's quoted using it in an NSF press release in which he expressed confidence that the National Science Board's new science-education Commission "will be capable of developing visionary initiatives."

If that's what the Commission does, there's reason to wonder why the bother. *Webster's New World Dictionary* defines a "visionary scheme" as one "not capable of being put into effect; not realistic; impractical." And, among definitions of the word in the *Oxford English Dictionary* is "Characterized by fantasy or imagination without corresponding reality."

R&D in France: After the Promises, a Letdown

Paris. Some steps have been accomplished toward the Mitterrand government's goal of disentangling the national research enterprise from its many ancient bureaucratic encumbrances. But, as might be expected, numerous difficulties have arisen in response to the reforms announced in January at the great Conference on Research organized by the highly ambitious Jean-Pierre Chevenement, Minister of Research and Technology (SGR Vol. XII, No. 1).

Stimulated by a good deal of government drumbeating and a preparatory series of provincial mini-conferences, the January event briefly aroused passions in the scientific community. But these have now cooled to the point where little is heard of the issues involved, and, in retrospect, the Conference looks more like a popular rally than a serious deliberation.

Inaugurated by President Mitterrand and closed by Prime Minister Mauroy, the Conference was the occasion for the grand oratory and subtle word games for which French science is justifiably renowned.

Three days of debates were set aside for permitting the various sectors—government, unions, universities, industry—to express their views on the role of research in society. But, after having agreed to take part, the opposition political parties did not show up, and union participation was uneven.

The pro-Communist union GCT had representatives on all the working committees and was loudly heard from. On the other hand, the CFDT, a union with Socialist tendencies and government ties, was very discreet, putting on a quasi-boycott that was supposed to reflect balance in the organization of the Conference. In fact, everything had been orchestrated by the Ministry of Research and Technology, and the reports, which had been written before the event, were directly under the control of Chevenement's administration.

The Chairman of the Conference, Philippe Lazar, President of the National Institute for Health and Medical Research (INSERM), stated during a long and brilliant speech that "discussion is a reflection of life itself." However, the discussions—contrary to expectations—rarely went beyond the limits of the public-sector research community, virtually ignoring the large and influential industrial sector, many of whose employes had expected some attention to their interests.

These researchers wanted official recognition of their role in society and, at the same time, guaranteed working conditions and security. On the first point, they were amply rewarded. The ministers' speeches were full of praise and the media gave them a lot of publicity. But the final report was ambiguous on the second point. Chairman Lazar, in denouncing the lack of professional mobility among French scientists, attributed it to "first of all the multiplication and the rigidity of the regulations." He suggested "regulatory modifications which would enhance interprofessional fluidity." However, each time previous governments have tried to attack this problem, they ran into savage union opposition.

In even-handed fashion, Lazar also directed criticism against the large public institutions, and especially against the National Center for Scientific Research (CNRS) and the universities, which have shown little interest in the transfer of knowledge and applied research.

A major role in the actual implementation of the government's plans has been entrusted to a new set-up, the Study Center for Advanced Systems and Technologies (CESTA), which is in charge of introducing new technologies into the economy via small and medium-size industry. Those who had doubts about the

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HEARING

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Stokes: How does the budget address minorities in science, engineering, and math?

Keyworth: I do not believe that there were any programs that in any significant way addressed these problems.

Stokes: Is the summer youth program still in operation?

Keyworth: If it is, marginally. I'm not sure.

Boland: Did you attend public schools?

Keyworth: Yes, I did.

Boland: Did you have any science education?

Keyworth: [Jokes that it was long ago].

Boland: But somewhere long the line, you must have got a love for science. I'm sure your teachers must have been going back to the summer training institutes, or retraining themselves, and I always thought it was a great program. No committee championed summer training institutes more than this committee. Now we've got nothing to brag about, because you've done away with the institutes. Weren't they worth it?

Keyworth: Some of those programs that existed were very productive, but what I'm focusing on is not the good things that we did in the 1960s, but that this country has a totally new set of problems. We are unprepared to address the competition that we face from all of our trading partners and even from the Soviet Union. We have new problems. We did not have the proper solutions last year and I would very much like to come before you next year with pride that we are taking steps that are responsibly addressing our problems.

...A New Emphasis on Industrial Research

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utilitarian goals of Jean-Pierre Chevenement's policy have thus been taken care of.

In pursuit of these goals, the structures of the public research establishments will be modified to allow them to create affiliations with private industry. This will apply first of all to the CNRS and INSERM. The Commission on Atomic Energy (CEA) will also benefit from this change, with 7500 of its employees formed into a new "institute for applied research and technology." In the meantime, these "knowledge transfer firms," as they are called, seem to have aroused greater interest among the ministry's bureaucrats than among researchers.

Where's the Budget?

Ecologists and anti-nuke proponents have expressed disappointment with the conference and its outcome. The preparation of a report on renewable energy was entrusted to two strong personalities, Philippe Chartier of the National Institute for Agronomic Research (INRA), who is an expert on biomass exploitation, and Haroun Tazieff, a volcanologist, who is as brilliant as he is controversial, and who was recently nominated President of the new Commission for the Study and Prevention of Major Natural Disasters. The report concludes that three areas should follow a policy leading to, at the very least, a tripling of funds: energy conservation, new energy sources, and the use of coal. The recommendations reflect the fact that solar energy has already lost its charm in the government's eyes, and the budget for the promotion of energy savings was cut in March in order to pay for an Algerian gas import bill.

Meanwhile, the most bothersome factor for researchers is the blocking of the 1982 budget. There is no official explanation on this subject. Staff members refuse to give any statements to the press, but those in charge at the Ministry for Research and Technology do not hide, in private, their anger towards their colleagues at the Budget Ministry. A very generous research budget was approved for 1982. However, delaying its implementation is holding down spending for several months, at least. It is doing this, in particular, on funds for new employes, so that despite official promises, there are numerous research centers which this year have fewer job openings than during the last year of Giscard d'Estaing's regime! The reason for all these shadowy operations is simple: The budget deficit foreseen by the economists vastly exceeds that which the government wrote into the official budget.

Enthusiasm for the Chevenement Conference is a thing of the past. The persistent rumors about a Cabinet reshuffle following Socialist losses in the local elections in March did not help clarify the situation. Chevenement isn't hiding his ambition to take over the position of Minister of Industry, which has again become attractive after the nationalization of major firms. As a result, scientists are feeling a bit abandoned.

A Bigger Slice of GNP

Skepticism abounds with regard to the implementation of the R&D objectives in the proposed Law for Orientation and Planning (LOP), which embodies the new basic goal of devoting 2.5 percent of the GNP by 1985. This should entail a "real" increase of 17.8 percent per year in funds for civilian R&D. Manpower is to increase at a rate of 4.5 percent per year. Government action is to be based on seven "mobilization programs": rational utilization of energy, biotechnologies, electronics, technological innovation and research at the service of the Third World, improvement of working conditions, promotion of French as a scientific language as well as the spreading of scientific knowledge, and, finally, the technological development of the industrial framework. As for basic research, the plan states that it "should be strong, and free and should cover all fields of knowledge." The planned increase is a more moderate rate of 13 percent per year. Particle physics and astrophysics would be somewhat sacrificed.

These ambitious plans were cheerfully announced before harsh economic realities were apparent to the Mitterrand government. Whether they will be fully carried out, or, as with high ambitions for research in past governments, trimmed and sliced, is not yet clear. But, on the basis of past experiences, the scientific community has its doubts.—FS

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From "Grant Swinger Papers": Dear Applicant

How would intellectual superstars of long ago have fared if today's conditions had existed when they sought support for their work? Might we find some of them receiving the following correspondence?

•

Dear Mr. Marconi,

Your inquiry concerning assistance for what you describe as a method of wireless communication has been carefully examined by a panel of specialists. It is their unanimous conclusion that the method is impractical. If you desire additional information about their findings, contact our Directorate for Semaphore Systems. . .

•

Dear Mr. Archimedes,

We note in your application for extension of your grant that a bathtub is listed among your equipment requirements. Since the foundation must be prepared to respond to legislative inquiries about the projects it supports, please explain why this item is necessary and what problem, or problems, you intend to investigate with it. Pending receipt of a satisfactory response, funding of your grant is suspended. . .

•

Dear Mr. Newton,

Since this agency is responsible for research in the physical sciences only, we have taken the liberty of forwarding to the Department of Agriculture your recent communication concerning the ripening of apples. To spare you any inconvenience or delay, we suggest you direct further inquiries on this subject to the department. . .

•

Dear Mr. Marx,

Regarding your proposed study concerning possible relationships between various economic factors and social developments: It was the feeling of the review panel that the subject you have proposed is of such considerable scope that the project ought to be conducted by a multi-disciplinary team, rather than by a single investigator. This would help promote balance and bring a variety of insights to the study. To carry out the project, it is considered desirable that an advisory committee periodically review progress and report back to this agency. We do not share your optimism about broad general interest in this subject, but we do conclude that it may be of sufficient importance to merit consideration for support, though no commitment can be made at this time. If you do resubmit an application, please be sure this time to include your institutional affiliation. . .

•

Dear Mr. Darwin,

Because of a limited amount of space on research vessels, we must regretfully limit accommodations to established scientific investigators who, in the judgment of their colleagues, are engaged in important research. We trust you will understand that this process is designed to maximize the use of existing research facilities and in no way reflects on the validity of your research proposal. . .

•

Dear Mr. deSade,

Regulations require that informed, voluntary consent must be obtained from persons serving as experimental subjects. If you would kindly have the participants in your project complete the enclosed consent forms, we will proceed with evaluating your research proposal. . .

From The Grant Swinger Papers, *by Daniel S. Greenberg, in collaboration with the Center for the Absorption of Federal Funds; 32 pages, $4.95 per copy, postpaid; available from: SGR, PO Box 6226D, Washington, DC 20015. Please include payment with order.*

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